WHAT IS CLAIMED IS:

1. A method for generating a preamble sequence in an orthogonal frequency division multiplexing (OFDM) communication system having m subcarriers in a frequency domain, the method comprising the steps of:

generating a preamble sequence of length n that is mapped to n subcarriers on a one-to-one basis, where n is less than m; and

assigning components constituting the preamble sequence to the n subcarriers among the m subcarriers on a one-to-one mapping basis, assigning null data to remaining subcarriers excluding the n subcarriers from the m subcarriers, and then IFFT (Inverse Fast Fourier Transform)-transforming the assigned result into time-domain data.

2. The method of claim 1, wherein the preamble sequence generating step comprises the step of generating the preamble sequence so that the null data is inserted in a particular subcarrier corresponding to a direct current (DC) component in the frequency domain among the n subcarriers.

3. The method of claim 1, wherein if m=256 and n=200, then the preamble sequence is generated as follows:

P(-100:100)={

1 0 -1 0 -1 0 -1 0 1 0 1 0	[-100:-89]
1 0 1 0 -1 0 1 0 -1 0 -1 0 -1	[- 88:-76]
0 1 0 -1 0 1 0 1 0 1 0 1	[- 75:-64]
0 -1 0 1 0 1 0 1 0 -1 0 1 0	[- 63:-51]
-1 0 1 0 1 0 -1 0 -1 0 1 0	[- 50:-39]
-1 0 1 0 -1 0 1 0 1 0 -1 0 1	[- 38:-26]
0 1 0 -1 0 -1 0 -1 0 1 0 -1	[- 25:-14]
0 -1 0 -1 0 -1 0 -1 0 1 0 1 0	[- 13:- 1]
0	
0 1 0 -1 0 -1 0 1 0 -1 0 1 0	[1: 13]
1 0 1 0 1 0 -1 0 1 0 1 0	[14: 25]
1 0 1 0 -1 0 1 0 -1 0 -1 0 -1	[26: 38]
0 -1 0 1 0 1 0 -1 0 1 0 -1	[39: 50]

```
 0 -1  0 -1  0 -1  0 -1  0 -1  0 -1  0          [  51: 63]
-1  0  1  0  1  0  1  0 -1  0 -1  0             [  64: 75]
-1  0  1  0  1  0 -1  0 -1  0 -1  0  1          [  76: 88]
 0 -1  0 -1  0  1  0 -1  0 -1  0 -1             [  89:100]
}*sqrt(2)*sqrt(2)*(±1)
```

where '-n:n' represents subcarriers of $-n^{th}$ to n^{th} subcarriers.

4. An apparatus for generating a preamble sequence in an orthogonal frequency division multiplexing (OFDM) communication system having m subcarriers in a frequency domain, the apparatus comprising:

a preamble sequence generator for generating a preamble sequence of length n that is mapped to n subcarriers on a one-to-one basis, where n is less than m; and

an inverse fast Fourier transformer (IFFT) for assigning components constituting the preamble sequence to the n subcarriers among the m subcarriers on a one-to-one mapping basis, assigning null data to remaining subcarriers excluding the n subcarriers from the m subcarriers, and then IFFT-transforming the assigned result into time-domain data.

5. The apparatus of claim 4, wherein the preamble sequence generator generates the preamble sequence so that the null data is inserted in a particular subcarrier corresponding to a direct current (DC) component in the frequency domain among the n subcarriers.

6. The apparatus of claim 4, wherein if m=256 and n=200, then the preamble sequence is generated as follows:

```
P(-100:100)={
 1  0 -1  0 -1  0 -1  0  1  0  1  0          [-100:-89]
 1  0  1  0 -1  0  1  0 -1  0 -1  0 -1       [- 88:-76]
 0  1  0 -1  0  1  0  1  0  1  0  1          [- 75:-64]
 0 -1  0  1  0  1  0  1  0 -1  0  1  0       [- 63:-51]
-1  0  1  0  1  0 -1  0 -1  0  1  0          [- 50:-39]
-1  0  1  0 -1  0  1  0  1  0 -1  0  1       [- 38:-26]
```

0 1 0 -1 0 -1 0 -1 0 1 0 -1	[- 25:-14]
0 -1 0 -1 0 -1 0 -1 0 1 0 1 0	[- 13:- 1]
0	
0 1 0 -1 0 -1 0 1 0 -1 0 1 0	[1: 13]
1 0 1 0 1 0 -1 0 1 0 1 0	[14: 25]
1 0 1 0 -1 0 1 0 -1 0 -1 0 -1	[26: 38]
0 -1 0 1 0 1 0 -1 0 1 0 -1	[39: 50]
0 -1 0 -1 0 -1 0 -1 0 -1 0 -1 0	[51: 63]
-1 0 1 0 1 0 1 0 -1 0 -1 0	[64: 75]
-1 0 1 0 1 0 -1 0 -1 0 -1 0 1	[76: 88]
0 -1 0 -1 0 1 0 -1 0 -1 0 -1	[89:100]

}*sqrt(2)*sqrt(2)*(±1)

where '-n:n' represents subcarriers of -n^{th} to n^{th} subcarriers.